

Remarks

This Amendment responds to the Office Action dated 2 April 2008 in the above-listed matter.

This Amendment is being filed within the three-month shortened statutory response period indicated by the Office Action, so no late fees are required. The present amendment does not change the total number of claims nor does it change the total number of independent claims. Accordingly, fees are not necessitated.

For the Specification:

Applicant amends the specification to correct inconsistencies and/or lack of correspondence between reference numerals used in the specification and those used for different elements, and to further clarify the specification. These amendments add no new subject matter.

For the Claims:

Applicant submitted claims 1-23. This Office Action rejects claims 1-23. Applicant amends claims 1, 17 and 21, and retains claims 2-16, 18-20 and 22-23 as originally submitted. Applicant respectfully requests reconsideration.

This Office Action rejected claims 1-23 under 35 U.S.C. §101 because the claimed invention was allegedly directed to non-statutory subject matter. In particular, the Office Action alleges that claims 1-23 consist solely of mathematical operations or algorithms without some claimed practical application.

This Amendment amends claim 1 in accordance with the Office Action. That is, independent claim 1 now recites a method of computing decisions in a computing environment. After computation and calculation in the computing environment, the outcome is presented at an output section of the computing environment. Support for these additions can be found in paragraph [0047] of the specifications. These amendments add no new subject matter. The modifications to claim 1 incorporate technology, i.e. a computing environment that is capable of presenting information at an output section, manipulate a tangible device. That is, the computing environment manipulates computing components to perform the method comprising steps defined in independent claim 1 in order to obtain a set of decisions. Claims 2-16 depend directly or indirectly from claim 1. Thus, Applicant believes the rejection of claims 1-16 under 35 U.S.C. §101 has been overcome.

This Amendment also amends claim 17 in accordance with the Office Action. That is, independent claim 17 now recites a computer program executable by a computer. The modifications to claim 17 incorporate technology, i.e., a computer program executable by a computer yields a claimed invention that manipulates not just numbers, abstract concepts or ideas. The program manipulates computing components in order to obtain the ultimate output. That is, an enterprise is enabled to obtain decisions based upon a set of optimized planning functions. Claims 18-23 depend directly or indirectly from claim 17. Accordingly, Applicant believes the rejection of claims 17-20 under 35 U.S.C. §101 has been overcome.

This Amendment additionally amends claim 21 in accordance with the Office Action. That is, independent claim 21 now recites a method of computing decisions in a computing

environment and presenting the optimized decisions. Applicant believes that the computing environment performing activities or operations recited in claim 21, coupled with the act of presenting the result of the mathematical operation and algorithm at an output section of the computing environment leads the method of claim 21 to be a process that manipulates a computing environment. Furthermore, the claimed practical application of claim 21 is to compute decisions for a set of decision variables used in a planning model. Claims 22-23 depend directly or indirectly from claim 21. Thus, Applicant believes the rejection of claims 21-23 under 35 U.S.C. §101 has been overcome.

This Office Action rejects claims 1-4, 15 and 22 under 35 U.S.C. 102(b) as being anticipated by Elad, et al., U.S. Patent No. 5,195,172 (hereinafter Elad). Elad teaches creating a set of constraint functions and objective functions, creating a purely numerical model and extracting the "current best" values for a set of decision variables.

Regarding independent claim 1, claim 1 recites the limitations of generating a planning function describing a planning model with the planning function depending on a set of decision variables, separating the planning function into independent planning functions, each of which depends on different decision variables, independently optimizing each of the independent planning functions to obtain decisions the decision variables, and presenting the obtained decisions.

The Office Action alleges that Elad discloses the invention of independent claim 1. The Office Action apparently equates the Elad constraints comprising an interface accepting a set of constraint and objective functions with Applicant's generation of a planning function recited in claim 1. The Office Action further equates the Elad teaching of creating a "score" that

reflects how close the constraints of a problem are to being satisfied and the degree of progress in the direction of the stated problem objectives (Elad, Abstract) with Applicant's separation of the planning function into independent functions depending on different decision variables. Also, the Office Action equates the Elad teaching of manipulating decision variables to calculate the "score" with Applicant's independent optimization of each independent planning function.

Elad teaches a method of combining constraint and objective functions into a numerical model, to ultimately produce a set of values defining a set of attributes and objects. In order to determine which is the "best" result set, a "score" is obtained and observed by the user. (col/line : 41/34-35). To calculate the observed value, the components of the created numerical function are used separately, such that the constraint functions are isolated from the objective functions in order to create the score. Thus, in order to calculate the ultimate value that the user sees, the constraints that are passed to the Problem Solving Engine (PSE) are the same constraints used to obtain the score.

Elad also teaches a method of discovering the "best" solution through two methods: weak and strong. Both practices involve the process of starting with one value, test it, and then test another value to determine which value has a greater improvement. This improvement affects the ultimate "score" of the function. The methodology of "trial-and-error" is used to determine the ultimate result that the user observes.

Despite Office Action allegations to the contrary, Elad fails to teach or suggest of using independent functions separated from a planning function to determine an optimal set of decision, as recited in independent claim 1. Rather, in Elad, originally defined constraints and objective functions are used as one

factor to determine the ultimate score that the user sees. Nor does Elad teach or suggest optimizing the set of independent functions, each function depending upon a different set of decision variables. In fact, Elad teaches a "trial-and-error" methodology in which multiple data points are tested to determine the optimal solution. In the absence of any teaching or suggestion, Elad cannot anticipate or render obvious Applicant's invention of claim 1.

Elad teaches to accept a set of constraint and objective functions, combine them into a numerical model, and use a "trial-and-error" method to determine a set of solutions that provide the best "score." It is not concerned with taking a planning model, generating a function from the model, then separating this planning function into a set of independent planning functions. Furthermore, Elad is not concerned with optimizing each of the independent planning functions to determine an optimal solution, as both the weak and strong methods utilize the "trial-and-error" method to determine an optimal solution. To read the generation of a planning function, separation of the function into independent functions, and optimization of these functions into the Elad reference, despite the lack of description or suggestion in Elad amounts to speculation. Such a mischaracterization of the prior art provides evidence that hindsight obtained from Applicant's specification has been used against its teacher and that any finding of obviousness should be reversed.

The Office Action fails to point out any correlation between the Elad's problem solving methodology and Applicant's optimization methodology.

It is Applicant's specification and not the prior art which teaches a method of obtaining a set of decision variables by separating a function into a set of independent planning

functions, and optimizing each separated function, as recited in claim 1. Applicant has discovered that this process of optimizing the independent functions, and obtaining decisions from the set of optimized functions allows a user to efficiently obtain a set of decisions from the planning model.

Consequently, Applicant believes that Elad fails to anticipate or render obvious Applicant's invention of original independent claim 1, and that claim 1 should now be found allowable. Claims 2-4 and 15 depend directly or indirectly from claim 1, and are also allowable for the reasons set forth above.

This Office Action rejects claims 5-11, and 16-21 under 35 U.S.C. 103(a) as being unpatentable over Elad, et al., U.S. Patent No. 5,195,172 (hereinafter Elad), in view of Ouimet, et al., U.S. Patent No. 6,308,162 (hereinafter Ouimet). Ouimet teaches a computer method for controlled optimization of enterprise planning models.

Claims 5-11 and 16 depend directly or indirectly from claim 1, and are allowable for the reasons set forth above.

Regarding independent claim 17, claim 17 recites the limitations of defining a primary objective function describing a primary objective, defining a strategic objective function describing a strategic objective, generating a planning function incorporating the primary and strategic objective function and including a non-linear function of a decision variable, separating the planning function into independent planning functions, each of which depends on different decision variables, independently optimizing each of the independent planning functions to obtain decisions the decision variables, and finally presenting the obtained decisions.

As discussed earlier in independent claim 1, Elad does not teach separating a planning function into independent planning functions dependant on different decision variables, and independently optimizing each of the functions prior to obtaining the decisions. Consequently, Applicant believes that Elad fails to anticipate or render obvious Applicant's invention of original independent claim 17 for the reasons set forth above in connection with the discussion of claim 1, and that claim 17 should now be found allowable. Claims 18-20 depend directly or indirectly from claim 1, and are also allowable for the reasons set forth above.

Regarding independent claim 21, claim 21 recites the limitations of defining a primary objective function describing a primary objective, generating a planning function incorporating the primary and strategic objective function and including a non-linear function of a decision variable, determining a coupling between the decision variables in the primary objective function, introducing an embedded constraint into the primary objective function, separating the planning function into independent planning functions, each of which depends on different decision variables, independently optimizing each of the independent planning functions to obtain decisions the decision variables, and finally presenting the obtained decisions.

As discussed earlier in independent claim 1, Elad does not teach separating a planning function into independent planning functions dependant on different decision variables, and independently optimizing each of the functions prior to obtaining the decisions. Consequently, Applicant believes that Elad fails to anticipate or render obvious Applicant's invention of original independent claim 21 for the reasons set forth above in connection with the discussion of claim 1, and that claim 21

should now be found allowable. Claims 22 depends directly from claim 21, and is also allowable for the reasons set forth above.

This Office Action also rejects claims 12-14, and 23 under 35 U.S.C. 103(a) as being unpatentable over Elad, et al., U.S. Patent No. 5,195,172 (hereinafter Elad), and Ouimet, et al., U.S. Patent No. 6,308,162 (hereinafter Ouimet) in further view of Deitrich, et al., U.S. Patent No. 5,630,070. Deitrich teaches a method for optimization of a manufacturing process.

Claims 12-14 depend directly or indirectly from claim 1, and are allowable for the reasons set forth above.

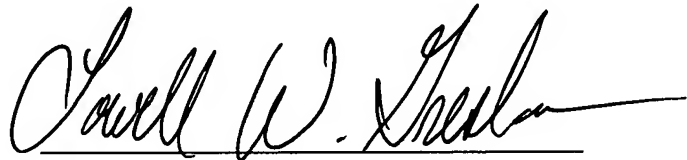
Claim 23 depends indirectly from claim 21, and is allowable for the reasons set forth above.

Accordingly, this Amendment amends claims 17 and 21. Claims 1-16, 18-20 and 22-23 remain in the application as originally submitted and are believed to be allowable due to their dependency from allowable claims.

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Applicant believes that the foregoing amendments and remarks are fully responsive to the rejections and/or objections recited in the 02 April 2008 Office Action and that the present application is now in a condition for allowance. Accordingly, reconsideration of the present application is respectfully requested.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Lowell W. Gresham', is written over a horizontal line.

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